As also required under 37 C.F.R.1.121, and pursuant to the present Amendment, a clean set of pending Claims 670-678 is set forth below.

670. A PLIIM-based hand-supportable linear imager comprising:

a hand-supportable housing having a light transmission window; and

a PLIIM-based image capture and processing engine disposed in said hand-supportable housing, and including

(1) a 1-D (i.e. linear) image formation and detection module mounted within said hand-supportable housing and having a linear image detection array and image formation optics with a field of view (FOV) projected through said light transmission window into an illumination and imaging field external to said hand-supportable housing,

(2) a pair of planar laser illumination arrays (PLIAs) mounted within said hand-supportable housing and arranged on opposite sides of said linear image detection array, each said PLIA comprising a plurality of planar laser illumination modules (PLIMs), for producing a plurality of spatially-incoherent planar laser illumination beam (PLIB) components, each arranged in a coplanar relationship with a portion of said FOV, and each said PLIM including a laser diode source and beam diverging optics for producing one said spatially-incoherent PLIB component, and

(3) an optical element mounted within said hand-supportable housing, for optically combining and projecting said plurality of spatially-incoherent PLIB components through said light transmission window in coplanar relationship with said FOV, onto the same points on the surface of an object to be illuminated so that each said point is illuminated by a group of said plurality of spatially-incoherent PLIB components,

whereby said linear image detection array detects time-varying speckle-noise patterns produced by said optically-combined spatially-incoherent PLIB components reflected/scattered off the illuminated object, and said time-varying speckle-noise patterns are time-averaged at said linear image detection array during the photo-integration time period thereof so as to reduce the RMS power of speckle-pattern noise observable at said linear image detection array.

671. The PLIIM-based hand-supportable linear imager of claim 670, which further comprises:

a LCD display panel integrated with said hand-supportable housing, for displaying images captured by said engine and information provided by a host computer system or other information supplying device; and

a manual data entry keypad integrated with said hand-supportable housing, for manually entering data into the imager during diverse types of information-related transactions supported by said PLIIM-based hand-supportable linear imager.

672. The PLIIM-based hand-supportable linear imager of claim 670, wherein said PLIIM-based image capture and processing engine is realized as a modular component, mounted within said hand-supportable housing.

673. The PLIIM-based hand-supportable linear imager of claim 670, which further comprises:

an image frame grabber disposed in said hand-supportable housing, for grabbing said linear images detected by said linear image detection array;

an image data buffer for buffering said grabbed linear images and constructing a 2-D image of said illuminated object; and

an image processing computer for processing said 2-D image.

674. A PLIIM-based hand-supportable linear imager comprising:

a hand-supportable housing having a light transmission window; and

a PLIIM-based image capture and processing engine disposed in said hand-supportable housing, and including

(1) a 1-D (i.e. linear) image formation and detection module mounted within said hand-supportable housing and having a linear image detection array and image formation optics with a fixed field of view (FOV) projected through said light transmission window into an illumination and imaging field defined external to said hand-supportable housing,

(2) a pair of planar laser illumination arrays (PLIAs) mounted within said hand-supportable housing and arranged on opposite sides of said linear image detection array, each said PLIA comprising a plurality of planar laser illumination modules (PLIMs), for producing a plurality of spatially-incoherent planar laser illumination beam (PLIB) components, each being arranged in a coplanar relationship with a portion of said FOV, and each said PLIM including a

laser diode source and beam diverging optics for producing one said spatially-incoherent PLIB component,

(3) an optical element mounted within said hand-supportable housing, for optically combining and projecting said plurality of spatially-coherent PLIB components through said light transmission window in a coplanar relationship with said FOV, onto the same points on the surface of an object to be illuminated so that each said point is illuminated by a group of said plurality of spatially-incoherent PLIB components,

whereby said linear image detection array detects linear images containing time-varying speckle-noise patterns produced by said optically-combined spatially-coherent PLIB components reflected/scattered off the illuminated object, and said time-varying speckle-noise patterns are time-averaged at said linear image detection array during the photo-integration time period thereof so as to reduce the RMS power of speckle-pattern noise observable at said linear image detection array, and

(4) an image frame grabber disposed in said hand-supportable housing, for grabbing said linear images detected by said linear image detection array;

an image data buffer for buffering said grabbed linear images and constructing a 2-D image of said illuminated object;

an image processing computer for processing said 2-D image;

a camera control computer for controlling components said PLIIM-based hand-supportable linear imager; and

a manually-actuatable trigger switch for manually activating said pair of planar laser illumination arrays, said linear-type image formation and detection (IFD) module, said image frame grabber, said image data buffer, and said image processing computer, via said camera control computer, upon manual activation of said manually-actuatable trigger switch, and capturing images of objects through said image formation optics.

675. The PLIIM-based hand-supportable linear imager of claim 674, which further comprises:

a LCD display panel and a data entry keypad integrated with said hand-supportable housing, for supporting diverse types of transactions using said PLIIM-based hand-supportable linear imager.

676. The PLIIM-based hand-supportable linear imager of claim 674, wherein said PLIIM-based image capture and processing engine is realized as a modular component, mounted within said hand-supportable housing.

677. The PLIIM-based hand-supportable linear imager of claim 674, wherein said image buffer and image processing computer are disposed in said hand-supportable housing.

678. The PLIIM-based hand-supportable linear imager of claim 674, wherein said image processing computer comprises one or more extendable programs capable of performing image-based bar code symbol decoding operations on said 2-D image.

As also required under 37 C.F.R.1.121, and pursuant to the present Amendment, a clean version of the inventorship of the claimed invention is as follows:

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